

Patent Application Serial No. 09/925,181  
Response under 37 C.F.R. § 1.116 to Office Action dated 11/22/2005  
Page 2 of 11

### **AMENDMENT AND PRESENTATION OF CLAIMS**

Please replace all prior claims in the present application with the following claims, in which claims 3 and 6 are amended.

1. (Canceled).

2. (Canceled).

3. (Previously Presented) A method of scheduling packets within a terminal used in a satellite communications system, the method comprising:

transmitting bandwidth allocation requests to a satellite based upon prior bandwidth allocations and packets stored within a plurality of queues of the terminal, the plurality of queues being prioritized and corresponding to user services that include a connection-oriented service and a connectionless service;

receiving current bandwidth allocations in response to the transmitted bandwidth allocation requests;

preparing a schedule plan for transmitting the stored packets based upon the current bandwidth allocations and the prioritization of the plurality of queues, wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations; and

distributing assignments of packets corresponding to the connection-oriented service among the packet transmission opportunities to minimize jitter.

4. (Canceled).

Patent Application Serial No. 09/925,181  
Response under 37 C.F.R. § 1.116 to Office Action dated 11/22/2005  
Page 3 of 11

5. (Canceled).

6. (Previously Presented) A method of scheduling packets within a terminal used in a satellite communications system, the method comprising:

transmitting bandwidth allocation requests to a satellite based upon prior bandwidth allocations and packets stored within a plurality of queues of the terminal, the plurality of queues being prioritized; receiving current bandwidth allocations in response to the transmitted bandwidth allocation requests;

preparing a schedule plan for transmitting the stored packets based upon the current bandwidth allocations and the prioritization of the plurality of queues, wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations;

servicing the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system;

creating a hierarchical list of a subset of the plurality of queues corresponding to the packet transmission opportunities; and

selectively preempting one of the assignment of the schedule plan based upon the hierarchical list.

7-9. (Canceled).

10. (Currently Amended) A terminal apparatus for transmitting packets to a satellite communications system, comprising:

a plurality of queues configured to store the packets, the plurality of queues being prioritized; and

a bandwidth-on-demand control logic configured to prepare a schedule plan for transmitting the stored packets based upon current bandwidth allocations and the prioritization of the plurality of queues.

Patent Application Serial No. 09/925,181  
Response under 37 C.F.R. § 1.116 to Office Action dated 11/22/2005  
Page 4 of 11

the current bandwidth allocations being based upon prior bandwidth allocation and the stored packets,  
wherein the schedule plan assigns the stored packets to packet transmission opportunities associated  
with the current bandwidth allocations;

wherein the plurality of queues correspond to user services that include a connection-oriented  
service and a connectionless service; and

~~The apparatus according to Claim 9,~~ wherein the bandwidth-on-demand control logic is configured to  
distribute assignments of packets corresponding to the connection-oriented service among the packet  
transmission opportunities to minimize jitter.

11. (Canceled).

12. (Canceled).

13. (Currently Amended) A terminal apparatus for transmitting packets to a satellite communications  
system, comprising:

a plurality of queues configured to store the packets, the plurality of queues being prioritized;

a bandwidth-on-demand control logic configured to prepare a schedule plan for transmitting the  
stored packets based upon current bandwidth allocations and the prioritization of the plurality of queues,  
the current bandwidth allocations being based upon prior bandwidth allocation and the stored packets,  
wherein the schedule plan assigns the stored packets to packet transmission opportunities associated  
with the current bandwidth allocations; and

a queue servicing logic coupled to the plurality of queues and configured to service the plurality of  
queues according to the schedule plan to selectively forward the stored packets to an uplink channel of  
the satellite communications system; and

Patent Application Serial No. 09/925,181  
Response under 37 C.F.R. § 1.116 to Office Action dated 11/22/2005  
Page 5 of 11

~~The apparatus according to Claim 12~~, wherein the queue servicing logic is configured to create a hierarchical list of a subset of the plurality of queues corresponding to the packet transmission opportunities, and to selectively preempt one of the assignment of the schedule plan based upon the hierarchical list.

14-16. (Canceled).

17. (Currently Amended) A satellite communications system comprising:

a hub configured to control bandwidth allocations in conjunction with a satellite; and

a plurality of terminals configured to issue bandwidth allocation requests to the satellite, each of the terminals comprising,

a plurality of queues configured to store packets, the plurality of queues being prioritized,

and

a bandwidth-on-demand control logic configured to prepare a schedule plan for transmitting the stored packets based upon current bandwidth allocations and the prioritization of the plurality of queues, the current bandwidth allocations being based upon prior bandwidth allocation and the stored packets, wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations; and

wherein the plurality of queues correspond to user services that include a connection-oriented service and a connectionless service; and

~~The system according to Claim 16~~, wherein the bandwidth-on-demand control logic is configured to distribute assignments of packets corresponding to the connection-oriented service among the packet transmission opportunities to minimize jitter.

18. (Canceled).

Patent Application Serial No. 09/925,181  
Response under 37 C.F.R. § 1.116 to Office Action dated 11/22/2005  
Page 6 of 11

19. (Canceled).

20. (Currently Amended) A satellite communications system comprising:

a hub configured to control bandwidth allocations in conjunction with a satellite; and

a plurality of terminals configured to issue bandwidth allocation requests to the satellite, each of the terminals comprising,

a plurality of queues configured to store packets, the plurality of queues being prioritized,

and

a bandwidth-on-demand control logic configured to prepare a schedule plan for transmitting the stored packets based upon current bandwidth allocations and the prioritization of the plurality of queues, the current bandwidth allocations being based upon prior bandwidth allocation and the stored packets, wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations; and

wherein the each of the terminals further comprises a queue servicing logic coupled to the plurality of queues and configured to service the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system; and

~~The system according to Claim 19,~~ wherein the queue servicing logic is configured to create a hierarchical list of a subset of the plurality of queues corresponding to the packet transmission opportunities, and to selectively preempt one of the assignment of the schedule plan based upon the hierarchical list.

21-23. (Canceled).

Patent Application Serial No. 09/925,181  
Response under 37 C.F.R. § 1.116 to Office Action dated 11/22/2005  
Page 7 of 11

24. (Currently Amended) A terminal apparatus for transmitting packets to a satellite communications system, comprising:

means for transmitting bandwidth allocation requests to a satellite based upon prior bandwidth allocations and packets stored within a plurality of queues of the terminal, the plurality of queues being prioritized;

means for receiving current bandwidth allocations in response to the transmitted bandwidth allocation requests; and

means for preparing a schedule plan for transmitting the stored packets based upon the current bandwidth allocations and the prioritization of the plurality of queues, wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations;  
and

wherein the plurality of queues correspond to user services that include a connection-oriented service and a connectionless service; and

~~The apparatus according to Claim 23,~~ wherein the preparing means distributes assignments of packets corresponding to the connection-oriented service among the packet transmission opportunities to minimize jitter.

25. (Canceled).

26. (Canceled).

Patent Application Serial No. 09/925,181  
Response under 37 C.F.R. § 1.116 to Office Action dated 11/22/2005  
Page 8 of 11

27. (Currently Amended) A terminal apparatus for transmitting packets to a satellite communications system, comprising:

means for transmitting bandwidth allocation requests to a satellite based upon prior bandwidth allocations and packets stored within a plurality of queues of the terminal, the plurality of queues being prioritized;

means for receiving current bandwidth allocations in response to the transmitted bandwidth allocation requests;

means for preparing a schedule plan for transmitting the stored packets based upon the current bandwidth allocations and the prioritization of the plurality of queues, wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations;  
and

means for servicing the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system; and

~~The apparatus according to Claim 26,~~ wherein the servicing means creates a hierarchical list of a subset of the plurality of queues corresponding to the packet transmission opportunities and selectively preempts one of the assignment of the schedule plan based upon the hierarchical list.

28-30. (Canceled).

31. (Currently Amended) A computer-readable medium carrying one or more sequences of one or more instructions for scheduling packets within a terminal used in a satellite communications system, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

transmitting bandwidth allocation requests to a satellite based upon prior bandwidth allocations and packets stored within a plurality of queues of the terminal, the plurality of queues being prioritized;

Patent Application Serial No. 09/925,181  
Response under 37 C.F.R. § 1.116 to Office Action dated 11/22/2005  
Page 9 of 11

receiving current bandwidth allocations in response to the transmitted bandwidth allocation requests; and

preparing a schedule plan for transmitting the stored packets based upon the current bandwidth allocations and the prioritization of the plurality of queues, wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations; and

wherein the plurality of queues in the transmitting step correspond to user services that include a connection-oriented service and a connectionless service; and

~~The computer-readable medium according to Claim 30, wherein the preparing step comprises:~~

distributing assignments of packets corresponding to the connection-oriented service among the packet transmission opportunities to minimize jitter.

32. (Canceled).

33. (Canceled).

34. (Currently Amended) A computer-readable medium carrying one or more sequences of one or more instructions for scheduling packets within a terminal used in a satellite communications system, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

transmitting bandwidth allocation requests to a satellite based upon prior bandwidth allocations and packets stored within a plurality of queues of the terminal, the plurality of queues being prioritized;

receiving current bandwidth allocations in response to the transmitted bandwidth allocation requests; and



Patent Application Serial No. 09/925,181  
Response under 37 C.F.R. § 1.116 to Office Action dated 11/22/2005  
Page 10 of 11

preparing a schedule plan for transmitting the stored packets based upon the current bandwidth allocations and the prioritization of the plurality of queues, wherein the schedule plan assigns the stored packets to packet transmission opportunities associated with the current bandwidth allocations; and  
wherein the one or more processors further perform the step of servicing the plurality of queues according to the schedule plan to selectively forward the stored packets to an uplink channel of the satellite communications system; and

~~The computer-readable medium according to Claim 33,~~ wherein the servicing step comprises:

creating a hierarchical list of a subset of the plurality of queues corresponding to the packet transmission opportunities; and

selectively preempting one of the assignment of the schedule plan based upon the hierarchical list.

35. (Canceled).